UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,894	01/26/2001	Ronald Dean Parrish	BLD920000045US1	7753

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EXAMINER
PHAM, THIERRY L

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	**Applicant(s)**
Office Action Summary	09/770,894	PARRISH ET AL.
	Examiner	**Art Unit**	
	Thierry L. Pham	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _14 September 2005_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-6,10-16,20-26 and 30_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-6,10-16,20-26 and 30_ is/are rejected.

7)☒ Claim(s) _7,17 and 27_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

● This action is responsive to the following communication: an Amendment filed on 9/14/05.

● Claims 1-30 are pending in application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6, 10-13, 16, 20-23, 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 6549947), and in view of Herzog et al (US 4651278).

Regarding claim 1, Suzuki discloses a method for interfacing with a printer driver (printer driver 5 interfacing with printer 3, fig. 1), comprising:

● receiving (cable connecting host computer and printer 3, fig. 1) data transmitted from the printer driver (printer driver 5, fig. 1);

● receiving an acknowledgment request from the printer driver (printer driver 5 requests printer 3 to return an acknowledge upon receiving print data, fig.7-8, col. 6, lines 32-65, please notes: printer driver 5 is also for controlling print monitor 9 as shown in fig. 1, col. 5, lines 35-38);

● transmitting (cable connecting between host computer 1 and printer 3, fig. 1) an acknowledgment reply (status and error data replies sent to the printer driver from the printer, fig. 1-2, col. 6, lines 32-65) to the printer driver (printer driver 5, fig. 1) in response to the acknowledgment request before (a reply can be returned from the printer 3 immediately after the printer 3 has completed receipt of a corresponding command and/or page, but not yet completely processed the print data, col. 6, lines 32-48, please notes: a print job is divided and transmitted in multiple bands and/or per-page basis, and a return reply is updated for each band and/or page, therefore, a return status is replied before *"completing"* the print job comprising plurality of pages, see cols. 7-8 and figs. 7-

8 for different types of commands transmitted from printer driver to printer) completing the initial check of the printer to cause the printer driver to send further data;

• resynchronizing data processing operations (retransmitting the print data if errors occurred within printer, fig. 12, abstract, col. 6, lines 32-48) in response to detecting an error in the printer;

• and rasterizing (bit image, col. 5, lines 40-50) and outputting (print engine, 29, fig. 1) the data.

Suzuki teaches a printer for interfacing with printer driver for communicating acknowledgement reply (i.e. job status, status request, printer's status, and etc) but fails to teach the host computer including printer driver that does not send further data to print until receiving an acknowledgement reply indicating that the transmitted data passed an initial check and to detect an error in the received data.

Herzog, in the same field of endeavor for communicating acknowledgement reply between printer and host computer, teaches the host computer including printer driver that does not send further data to print until receiving an acknowledgement reply indicating that the transmitted data passed an initial check (the host is not allowed to send any further commands and/or print data until it receives an acknowledgement reply from the printer, col. 15, lines 4-10, and please notes that it is known in the art that host computer also includes a printer driver for converting and transmitting a print job to a printer) and to detect an error in the received data (checking errors of the received data, col. 24, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made by modifying printer driver of Suzuki to include a method for preventing sending further data to print until receiving an acknowledgement reply from the printer as taught by Herzog because of a following reason: (•) to prevent errors occurred within print job data from further transmitting to the printer, by doing so, it eliminates wasted storage for storing error print data and to prevent bad print data from printing (i.e. reducing print media waste).

Therefore, it would have been obvious to combine Suzuki with Herzog to obtain the invention as specified in claim 1.

Regarding claim 2, the combinations of Herzog and Suzuki further teaches the method of claim 1, wherein the received data comprises a first received data set, further comprising a receiving second data set from the printer driver after transmitting the acknowledgement reply and before completing the rasterization of the first data set (it is known in the art to rasterize all the pages and/or bands of the print job at the same, that is, receiving all pages of the print job before initializing and completing rasterization, notes to applicants: claim 2 does not indicate what represents a "set of data", and herein, the examiner interprets bands and/or pages of print data as "a set of data").

Regarding claim 3, Suzuki further teaches wherein each received data set comprises a page of data (page of data, 7, lines 54-56), a portion of a page or commands to outputs.

Regarding claim 6, Herzog further teaches the method of claim 1, wherein the initial check is to verify that the data was received, accepted, and syntax checked (checking errors of the received data, col. 24, lines 20-25).

Regarding claim 10, combinations of Herzog and Suzuki further teaches wherein transmitting the acknowledgment reply to the printer driver in response to the acknowledgment request before completing the initial check the host is not allowed to send any further commands and/or print data until it receives an acknowledgement reply from the printer, col. 15, lines 4-10, Herzog) of the sent data comprises an asynchronous processing mode (asynchronous mode, col. 15, lines 40-45) wherein resynchronizing (col. 10, lines 1-45, Suzuki) data processing operations in response to detecting the error comprises beginning a synchronous processing mode wherein the acknowledgment reply is sent to the printer driver in response to the acknowledgment request after completing the initial check of the resent data.

Claims 11-13, 16, 20 recite limitations that are similar (i.e. system) and in the same scope of invention as to those in claims 1-3, 6, 10 above (respectively); therefore, claims 11-13, 16, and 20 are rejected for the same rejection rationale/basis as described in claims 1-3, 6, and 10. Both Suzuki and Herzog explicitly teaches a printing system (i.e. fig. 1 of Suzuki and fig. 1 of Herzog).

Regarding claims 21-23, 26, and 30: Claims 21-23, 26, and 30 recite limitations that are similar and in the same scope of invention as to those in claims 1-3, 6, and 10 (respectively) except computer readable memory for storing computer programs/steps. All computers/printers have some type of computer readable medium (i.e. RAM 23, fig. 1 of Suzuki) for storing computer programs, hence claims 21-23, 26, and 30 would be rejected using the same rationale as in claims 1-3, 6, and 10.

Claims 4, 14, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Herzog, and further in view of Suzuki et al (EP 820004).

Regarding claim 4, the combinations of Suzuki and Herzog fail to teach buffering the second data set while the first data set is being rasterized; and rasterizing the buffered second data set after completing the rasterization of the first data set.

Suzuki (EP 820004), in the same field of endeavor for printing, teaches buffering the second data set (intermediate code buffer 13, fig. 4) while the first data set is being rasterized (first print data is rasterized and stored in image buffer 15, fig. 4); and rasterizing the buffered second data set after completing the rasterization of the first data set (rasterized the second print data after the first print data had been rasterized, fig. 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made by modifying printer Suzuki and Herzog to include a method of buffering the second data set while the first data set is being rasterized and rasterizing the buffered second data set after completing the rasterization of the first data set because of the following reason: (1) rasterizing first incoming print job prior to rasterize next print job improves system performance and to reduce storage capacity. It is also known in the art that first incoming print job is rasterized before the next incoming print job.

Therefore, it would have been obvious to combine Suzuki and Herzog with Suzuki (EP 82004) to obtain the invention as specified in claim 4.

Regarding claim 14, which recite limitations that are similar (i.e. system) and in the same scope of invention as to those in claim 4 above; therefore, claim 14 is rejected for the same rejection rationale/basis as described in claim 4. Both Suzuki and Herzog explicitly teach a printing system (i.e. fig. 1 of Suzuki and fig. 1 of Herzog).

Regarding claim 24: Claim 24 recite limitations that are similar and in the same scope of invention as to those in claim 4 except computer readable memory for storing computer programs/steps. All computers/printers have some type of computer readable medium (i.e. RAM 23, fig. 1 of Suzuki) for storing computer programs, hence claim 24 would be rejected using the same rationale as in claim 4.

Claims 5, 15, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Herzog as applied to claims 1, 11, and/or 21 above, and further in view of Parker et al (U.S. 6441919).

Regarding claims 5, 15, and 25, the combinations of Suzuki and Herzog do not explicitly teach two rasterizers to rasterize in parallel the two data sets.

Parker, in the same field of endeavor for printing, teaches two rasterizers to rasterize in parallel the two data sets (parellel rasterizers, fig. 1, col. 5, lines 1-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the printer of Suzuki and Herzog to include a parallel rasterizers as per teachings of Parker because of a following reason: (1) to increase printing speed by processing two sets of print data using parallel rasterizers.

Therefore, it would have been obvious to combine Suzuki and Herzog with Parker to obtain the invention as specified in claims 5, 15, and 25.

Regarding claim 15 recite limitations that are similar (i.e. system) and in the same scope of invention as to those in claim 5 above; therefore, claim 15 is rejected for the

same rejection rationale/basis as described in claim 5. Both Suzuki and Herzog explicitly

teach a printing system (i.e. fig. 1 of Suzuki and fig. 1 of Herzog).

Regarding claim 25: Claim 25 recite limitations that are similar and in the same

scope of invention as to those in claim 5 except computer readable memory for storing

computer programs/steps. All computers/printers have some type of computer readable

medium (i.e. RAM 23, fig. 1 of Suzuki) for storing computer programs, hence claim 25

would be rejected using the same rationale as in claim 5.

Response to Arguments

Applicant's arguments filed 9/14/05 have been fully considered but they are not

persuasive.

• Regarding claims 1, 11, and 21, the applicants argued the cited prior art of record (US

4651278 to Herzog) fails to teach and/or suggest "the printer driver does not send further

data to print until receiving an acknowledgement reply indicating that the transmitted

data passed an initial check".

In response, the examiner fully disagrees with the applicants' arguments/assertions.

Herzog clearly teaches the printer driver does not send further data to print until receiving

an acknowledgement reply indicating that the transmitted data passed an initial check (the

host is *not allowed to send* any further commands until it receives an Acknowledge

Reply from the printer, col. 15, lines 5-9). "Transmitted data" as cited in claims 1, 11,

and 21 is nothing more than a control command sent from a host computer for requesting

printer to perform certain tasks (i.e. initialization commands, IPS command, and etc.,

cols. 6-15 and col. 14). In addition, Herzog clearly teaches an Acknowledge Reply sent

from printer to the host to indicate that a received command (or command sequence)

requesting acknowledgement *has been accepted* for processing or an exception condition

has been detected in the processing of a command (col. 8, lines 64-67 to col. 9, lines 1-

29, col. 13, lines 39-48, col. 14, lines 63 to col. 15, lines 1-67). In other words, the printer

processes a requested command sent from host computer and then sends a response back

to a host computer indicates that a requested command has been processed. In addition,

"the printer driver does not send further data to print until receiving an acknowledgement

reply indicating that the transmitted data passed an initial check" is also well known in

the art as admitted by the applicants (page 2, lines 1-5 "in prior art IPDS implementation,

the printer driver requests acknowledgement from the printer.   To return

acknowledgement, the printer must completes a syntax check of the received page and

return an acknowledgement reply in order to receive the next page from the printer driver

on the computer").

● Regarding claims 1, 11, and 21, the applicants argued the cited prior art of record (US

6549947 to Suzuki) fails to teach and/or suggest "transmitting an acknowledgement reply

to the printer driver in response to the acknowledgement request before completing the

initial check of the sent data to cause the printer driver to send further data". In other

words, the applicants argued the cited prior art does not teach and/or suggest transmitting

an acknowledgement indicating an initial check passed to the printer driver before

completing the initial check.

In response, the examiner disagrees with the applicants.   Suzuki clearly teaches

transmitting an acknowledgement reply to the printer driver in response to the

acknowledgement request before completing the initial check of the sent data to cause the

printer driver to send further data (a reply can be returned from the printer immediately

after the printer has completed receipt of a corresponding command, col. 6, lines 43-45).

Also, it is well known in the art that a job completion status command is transmitted at

the beginning of a print job, and when a print job is completed, a status is transmitted

back to the host computer. Pages/bands of a print job are continuously transmitted from

host computer to printer while processing a job completion command (col. 3, lines 50-57).

• Regarding claims 2, 12, and 22, the applicants argued the cited prior arts of record fail to teach and/or suggest receiving a second data set from the print driver after transmitting the acknowledge reply and before completing the rasterization of the first data set.

In response, the examiner disagrees with the applicants' arguments. Suzuki clearly teaches receiving a second data set (i.e. band transmission declaration from the print driver after transmitting the acknowledge reply and before completing the rasterization of the first data set. Fig. 7 shows a reply to a band transmission command is sent immediately after receiving a request command from a host computer (col. 6, lines 43-45 and col. 10, lines 46 to col. 11, lines 13).

• Regarding claims 10, 20, and 31, the applicants argued the cited prior arts of record fails to teach and/or suggest asynchronous processing mode.

In response, Suzuki clearly teaches asynchronous processing mode (col. 11, lines 14-15). Herzog also teaches an acknowledgement reply is perform via asynchronous processing mode (col. 35, lines 4-10). In addition, acknowledgement reply as cited in claims 10, 20, and 31 fails to indicate whether a negative or positive acknowledgement reply. Herzog also teaches resynchronizing processing mode (col. 32, lines 30-36).

Allowable Subject Matter

Claims 7, 17, 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

For example, the limitations as recited in claim 7, wherein resynchronizing data processing operations in response to detecting the error further comprises: detecting an error while processing the received data; transmitting a negative acknowledgment

indicating an error that causes the printer driver to resend previously transmitted data that did not output successfully; and wherein after transmitting the negative acknowledgment, performing: (i) receiving data and one acknowledgment request; (ii) performing the initial check of the received data; (iii) determining whether the received data is resent data; and (iv) if the received data is resent data, then transmitting an acknowledgment reply to the printer driver in response to the acknowledgment request after completing the initial check of the resent data.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L. Pham whose telephone number is (571) 272-7439. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571)272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham

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PRIMARY EXAMINER